

ONTARIO MINISTRY OF ENVIRONMENT
36936000025721

OPERATING SUMMARY

TD
367
.A56
S76
1973
MOE

ST. MARYS

WATER POLLUTION CONTROL PLANT

LIBRARY COPY

APR 18 1975

MINISTRY OF THE
ENVIRONMENT

1
9
7
3

TD
367
.A56
S76
1973

St. Marys : water pollution
control plant.

82211



Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, SOUTHWESTERN REGION
D. McTavish

MANAGER, UTILITY OPERATIONS
A. Ladbroke

ST. MARYS

WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director



Digitized by the Internet Archive
in 2015

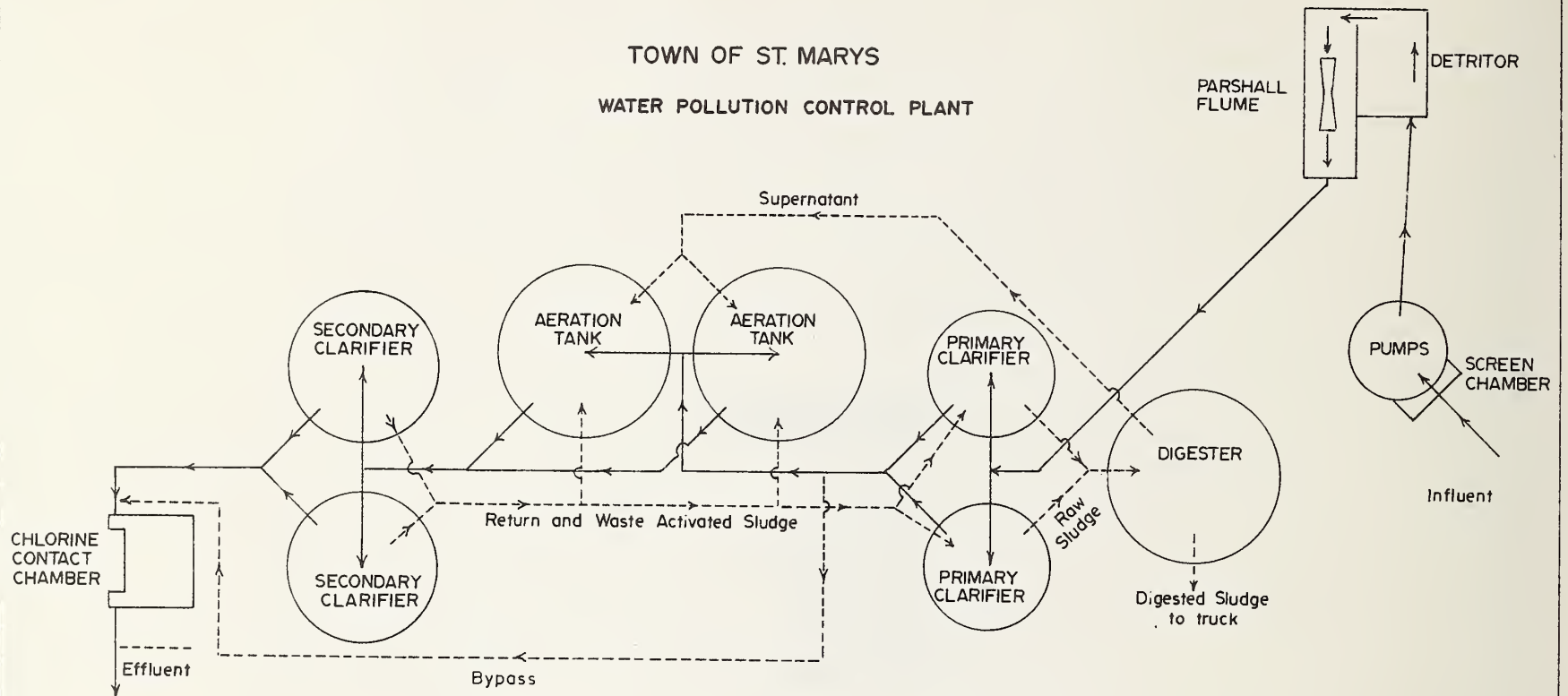
*TD
25721
3
10
H. 12*

<https://archive.org/details/stmaryswaterpoll25721>

CONTENTS

Title Page	1
Flow Diagram	4
Design Data	5
Process Data	6

TOWN OF ST. MARYS
WATER POLLUTION CONTROL PLANT



DESIGN DATA

Project Town of St. Marys WPCP

Project No. 1-0030-66

Design Flow 0.8 MIGD

RAW SEWAGE PUMPING:

3 FLYGT Model CP-3200 submersible pumps
each rated 1000 USGPM at 40' TDH

COMMINUTOR:

Type - ECODYNE Mod 25R

SCREENING:

Bar Screen

DETRITOR:

Type - DORR-OLIVER Type WA. Cap. 3.8 M.G.D.

PRIMARY CLARIFIERS:

2, each 30.0' i.d. x 11.5' swd

Volume (total) 104540 I. gal. Detention: 3.1 hr.

Overflow rate: 560 gpd per sq. ft.

Raw Sludge Pumps: Type - CARTER

AERATION TANKS:

2, each 36.0' i.d. x 15.0' swd

Volume (total) 190,620 I. gal. Detention: 5.7 hr.

Aerators: Type AMES-CROSTA

Return Sludge Pumps: 2 SMART-TURNER Model 3 WPCS

SECONDARY CLARIFIERS:

2, each 35.0' i.d. x 10.0' swd

Volume (total) 120,947 I.G. Detention: 3.5 hr.

Overflow Rate: 415 gpd per sq. ft.

CHLORINE CONTACT CHAMBER 4-pass:

2 passes 4.4' w x 13.0' l x 9.5' swd

1 pass 4.8' w x 13.0' l x 9.5' swd

1 pass 6.7' w x 13.0' l x 9.5' swd

Volume (total) 1528 I.G. Detention: 29 min.

CHLORINATOR TYPE:

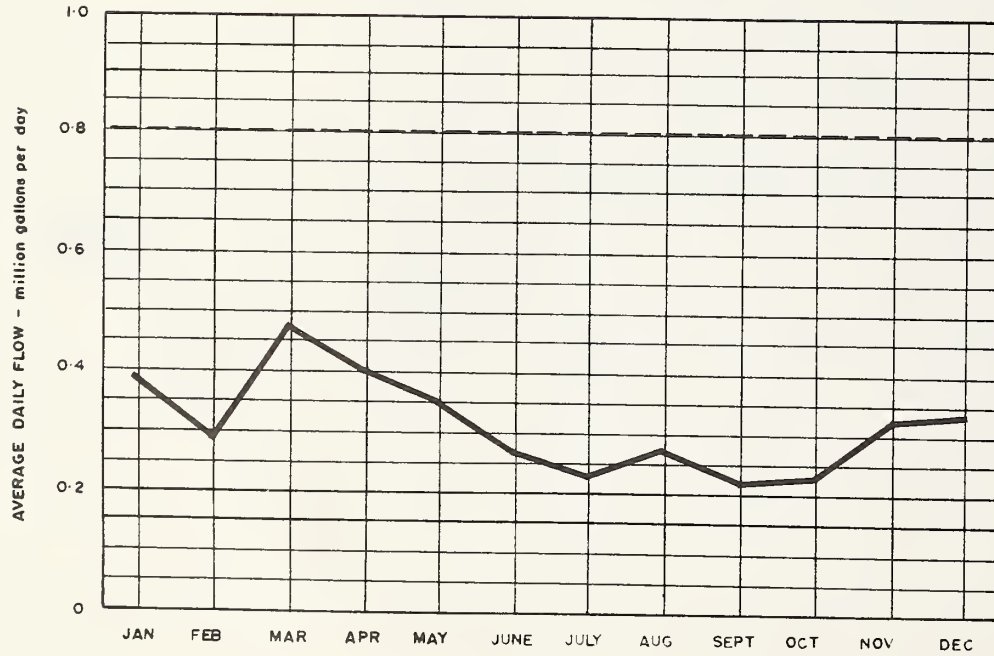
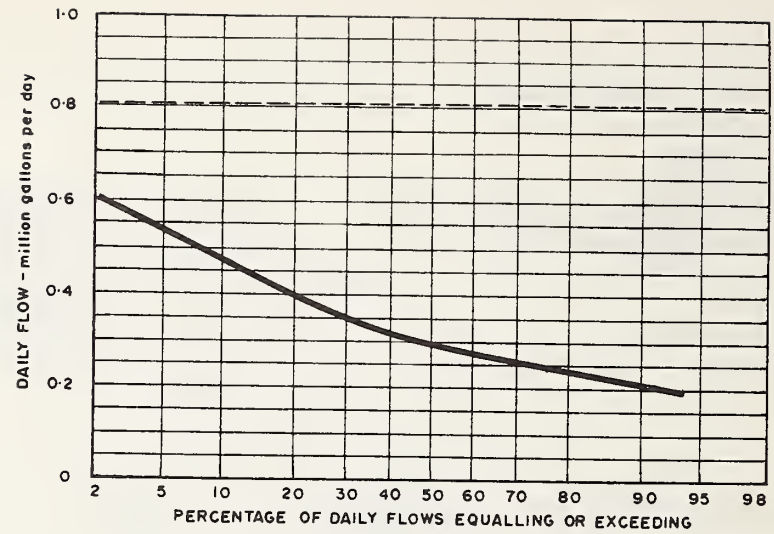
Wallace and Tiernan

PRIMARY DIGESTER:

one, 40.0' i.d. x 20.0' swd

Volume: 26650 cu. ft.

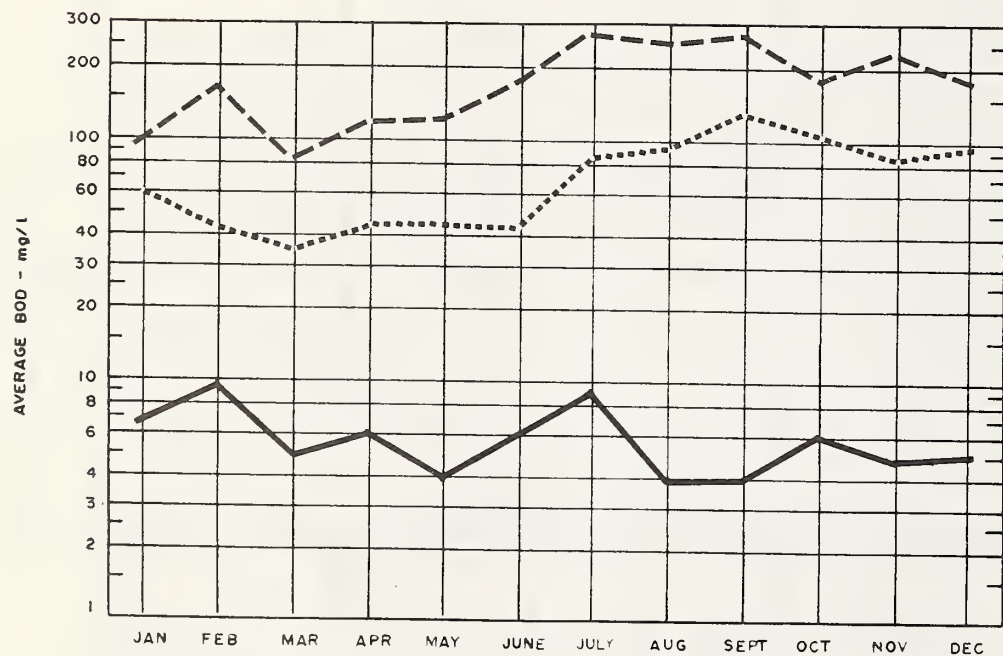
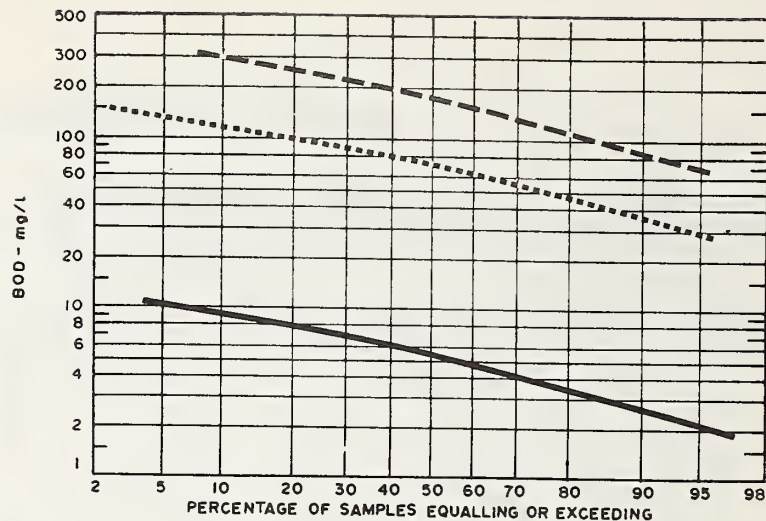
PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW	AVERAGE DAY	MAXIMUM DAY	INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT	REDUCTION		INFLUENT	EFFLUENT
	million gallons	mil. gal	mgd	mg/l	mg/l	%	10 ³ pounds	mg/l	mg/l	%	10 ³ pounds	mg/l P	mg/l P
JAN	11.8	0.38	0.59	100	7	93	11	70	5	93	8	3.8	2.5
FEB	8.0	0.29	0.39	160	9	94	12	205	5	98	16	5.4	2.8
MAR	14.7	0.47	0.85	84	5	94	12	230	4	98	33	3.9	1.7
APR	12.0	0.40	0.56	120	6	95	14	232	3	99	27	5.2	2.9
MAY	10.9	0.35	0.47	129	4	97	14	155	1	99	17	5.6	3.7
JUNE	8.2	0.27	0.34	182	6	97	14	183	1	99	15	5.8	3.6
JULY	7.4	0.24	0.26	272	9	97	19	238	3	99	17	6.6	3.1
AUG	8.0	0.26	0.31	265	4	98	21	285	1	99	23	8.3	3.4
SEPT	6.9	0.23	0.27	273	4	99	18	217	5	98	14	6.8	5.0
OCT	7.3	0.24	0.32	180	6	97	13	174	2	99	12	5.7	4.3
NOV	9.9	0.33	0.52	240	5	98	23	240	5	98	23	5.2	3.4
DEC	10.2	0.33	0.46	185	5	97	18	165	5	97	16	5.0	3.1
TOTAL	115.3	-	-	-	-	-	189	-	-	-	221	-	-
AVG.		0.31	MAXIMUM 0.85	188	6	96	16	210	3	98	18	5.8	3.3
No. of Samples	-	-	-	43	43	-	-	43	43	-	-	42	43

BIOCHEMICAL OXYGEN DEMAND

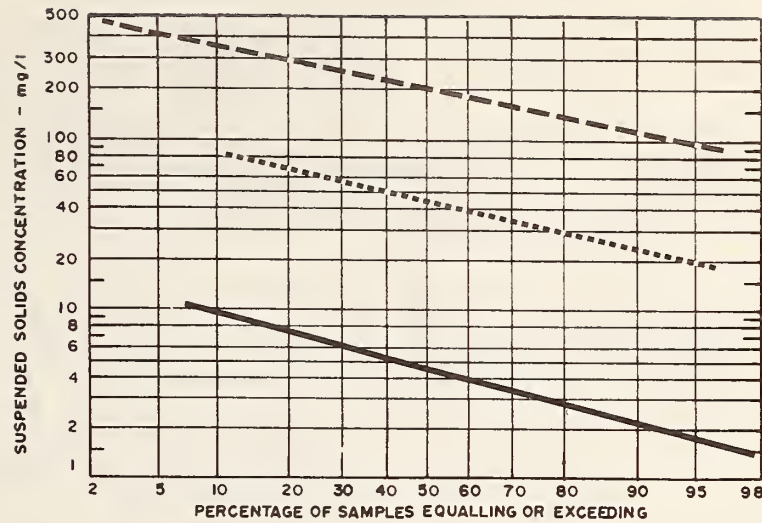


PLANT INFLUENT -----

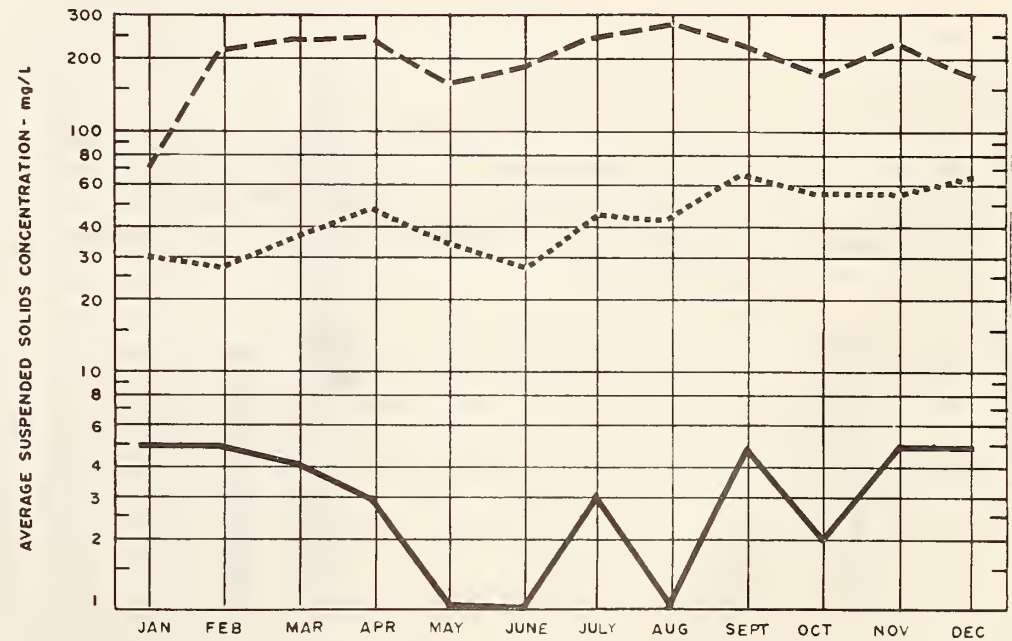
PRIMARY EFFLUENT

PLANT EFFLUENT _____

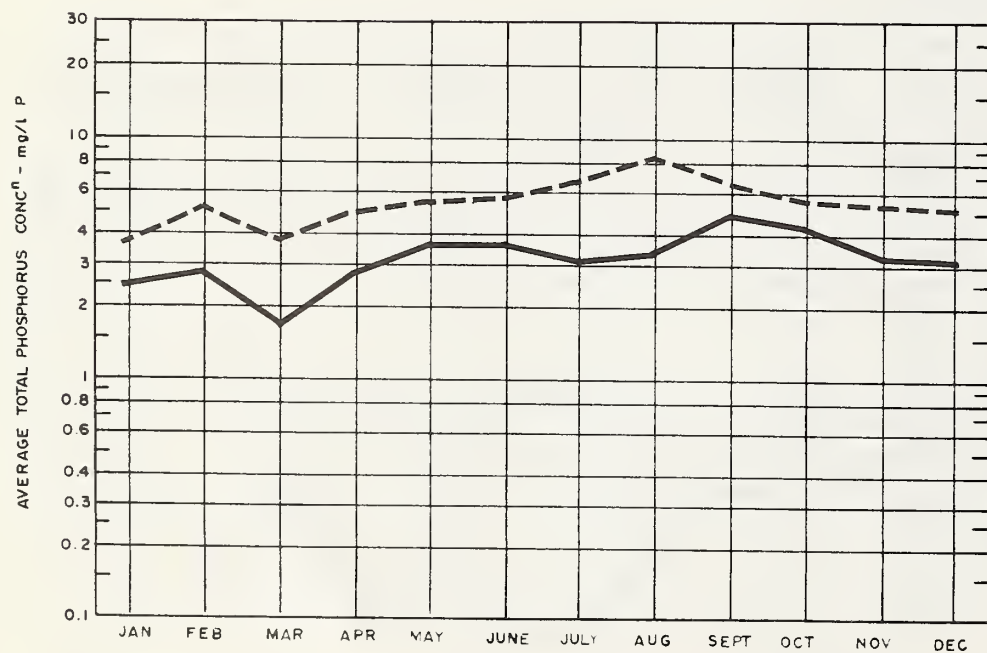
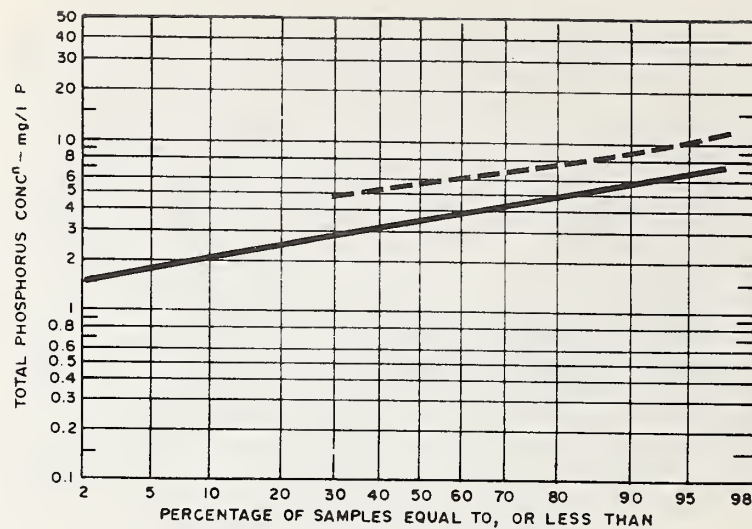
SUSPENDED SOLIDS



PLANT INFLUENT - - - - -
 PRIMARY EFFLUENT
 PLANT EFFLUENT _____



PHOSPHORUS

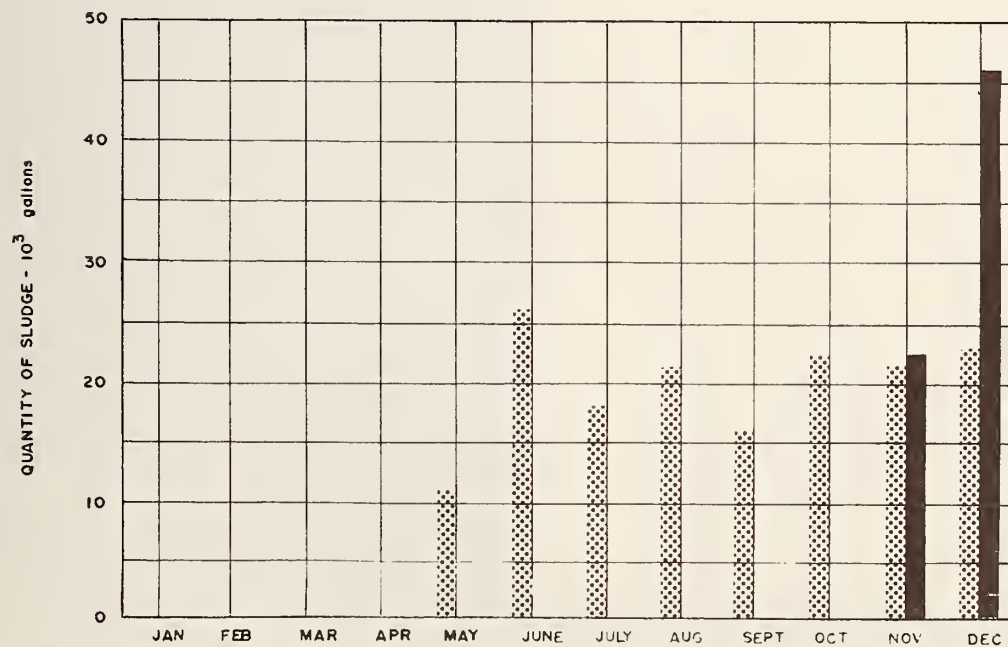
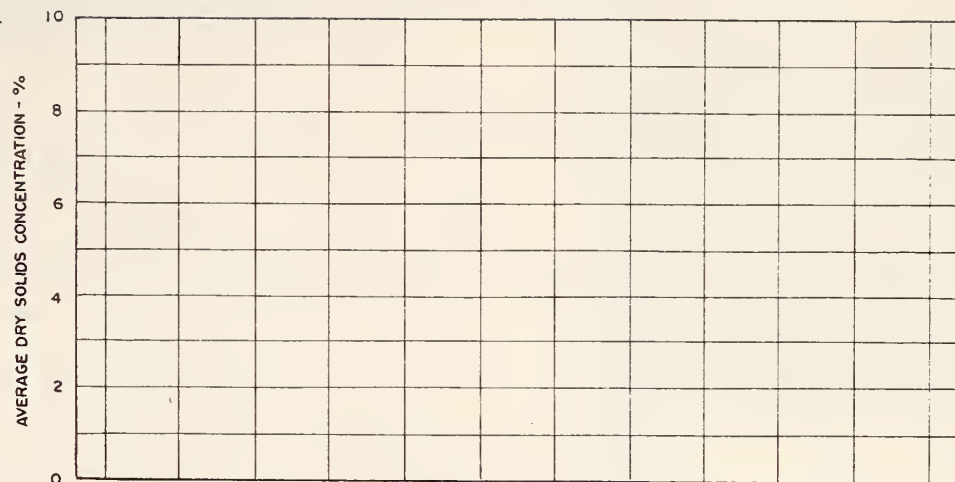


PLANT INFLUENT

PLANT EFFLUENT

DIGESTION

RAW SLUDGE
DIGESTED SLUDGE —————



RAW SLUDGE TO DIGESTER

DIGESTED SLUDGE REMOVED

TREATMENT DATA

MONTH	GRIT	CHLORINATION		PRIMARY EFFLUENT		AERATION			SLUDGE DIGESTION and DISPOSAL							
	QUANTITY REMOVED cubic feet	CL ₂ USED pounds	AVG. DOSE mg/l	BOD mg/l	SUSPENDED SOLIDS mg/l	MLSS CONC mg/l	F/M day ⁻¹	AIR 1000 ft ³ lb BOD	RAW SLUDGE			DIGESTED SLUDGE			SUPER-NATANT T. S. %	AMOUNT HAULED cubic yards
									QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOL. SOLIDS %	QUANTITY 10 ³ gallons	TOTAL SOLIDS %	VOL. SOLIDS %		
JAN	0	0		60	30											
FEB	0	0		42	27											
MAR	0	0		35	37											
APR	2	8		49	47											
MAY	42	282	2.6	48	34				11							
JUNE	27	249	3.0	47	27				27							
JULY	27	257	3.5	81	46				19							
AUG	25	382	4.8	94	45	1900	0.06		22							
SEPT	26	375	5.4	133	63	2300	0.07		16							
OCT	24	361	4.9	103	58	2400	0.05		22							
NOV	28	438	4.4	86	57	2500	0.06		21			22.9				136
DEC	18	386	3.8	97	65	2000	0.08		23			46.6				277
TOTAL	219	2738	-	-	-	-	-	-	161	-	-	69.5	-	-	-	413
AVG.	1.9 cu. ft/mil gal	342	3.4	73	45	2200	0.06		20							

**TD
367
.A56
S76
1973**

St. Marys : water pollution
control plant.

82211

LAB

